(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property **Organization** International Bureau



(43) International Publication Date 20 January 2005 (20.01.2005)

PCT

(10) International Publication Number WO 2005/006489 A1

(51) International Patent Classification7:

H01Q 3/00

(21) International Application Number:

PCT/KR2004/001744

(22) International Filing Date:

14 July 2004 (14.07.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 10-2003-0047761

14 July 2003 (14.07.2003)

(71) Applicant (for all designated States except US): ACE TECHNOLOGY [KR/KR]; 329-9, Songnae-dong, Sosa-gu, Bucheon-si, Gyeonggi-do 422-814 (KR).

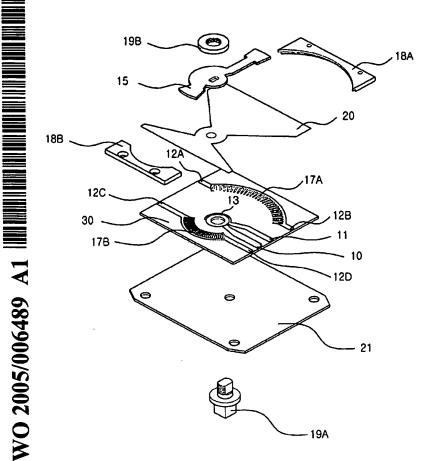
(72) Inventors; and

(75) Inventors/Applicants (for US only): TAE, Jae-Hoon [KR/KR]; #106-802 New Seoul Apt., Mansu 6-dong, Namdong-gu, Incheon 405-758 (KR). LEE, Yong-Ju [KR/KR]; 645-43, Yeongdeungpo-dong, Yeongdeungpo-gu, Seoul 150-899 (KR). KIM, Myoung-Kuk [KR/KR]; 557-2, Nonhyeon-dong, Namdong-gu, Incheon 405-850 (KR). PARK, Joo-Sung [KR/KR]; 538-1, Gwaebeop-dong, Sasang-gu, Busan 617-807 (KR). LEE, Joo-Hyung [KR/KR]; #106-1302 Nonhyeon Jugong Apt., 564-1, Nonhycon-dong, Namdong-gu, Incheon 405-736 (KR).

- (74) Agent: SHINSUNG PATENT FIRM; 2F, Line Bldg., 823-30, Yeoksam-dong, Kangnam-ku, Scoul 135-080 (KR).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CII, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH,

[Continued on next page]

(54) Title: PHASE SHIFTER HAVING POWER DIVIDING FUNCTION



(57) Abstract: Disclosed is a phase shifter having a power dividing function. The phase shifter includes: an input port for receiving a radio frequency (RF) signal; a power dividing unit for dividing the RF signal into a first divided signal of which phase is to be varied and a second divided signal having a fixed phase value; a first output port for outputting the second divided signal having the fixed phase value; a phase shift unit for dividing the first divided signal into a third divided signal and a fourth divided signal wherein the third divided signal and the fourth divided signal move in opposite directions; a phase delay unit for shifting phase of the third divided signal and the fourth divided signal based on a difference in a path length of the third divided signal and the fourth divided signal, to thereby generate phase-shifted signals; and at least two second output ports connected to the phase delay unit, for outputting the phase-shifted signals.

PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NB, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.